

WHAT IS CLAIMED IS:

1. A probe for bi-directional optical communication with a device external to the probe, the probe comprising:

an optical transmitter for mounting in proximity to an external device, the optical transmitter including a high intensity light emitting diode (LED) that generates light pulses in accordance with a data signal; and

an optical receiver for mounting in proximity to the external device, the optical receiver for generating an electrical data signal from an optical data signal impinging upon the optical receiver.

2. The probe of claim 1, wherein the high intensity LED generates light that is more intense than the light generated by an indicator light of an appliance.

3. The probe of claim 2, wherein the high intensity LED generates light that is more intense than a standard LED.

4. The probe of claim 2, wherein the high intensity LED generates light that is in the range of approximately 8000 millicandelas to approximately 31,000 millicandelas.

5. The probe of claim 1, the optical receiver further comprising:

a sensitive phototransistor for generating the electrical data signal.

6. The probe of claim 5, wherein the sensitive phototransistor generates a collector photo current of approximately 5 to 15 mA in response to a light pulse of 100 lx.

7. A probe for bi-directional optical communication with a device external to the probe, the probe comprising:

an optical transmitter for mounting in close proximity to an external device, the optical transmitter for generating light pulses in accordance with a data signal; and

an optical receiver for mounting in close proximity to the external device, the optical receiver including a sensitive phototransistor for generating an electrical data signal from an optical data signal impinging upon the optical receiver.

8. The probe of claim 7, wherein the sensitive phototransistor is stimulated to generate current in response to light in the range of 10 to 30 lx.

9. The probe of claim 7, the optical transmitter further comprising:
a high intensity light emitting diode (LED).
10. The probe of claim 9, wherein the high intensity LED generates light that is more intense than a standard LED.
11. The probe of claim 10, wherein the high intensity LED generates light that is more intense than the light generated by an indicator light of an appliance.
12. The probe of claim 10, wherein the high intensity LED generates light that is in the range of approximately 8,000 to approximately 31,000 millicandelas.

13. A method for bi-directional optical communication with a device external to the probe, the method comprising:
generating high intensity light pulses in accordance with a data signal from a diagnostic tool; and
generating an electrical data signal from an optical data signal.

14. The probe of claim 13, wherein the high intensity light signal is more intense than the light generated by an indicator light of an appliance.

15. The probe of claim 14, wherein the high intensity light signal is more intense than light produced by a standard LED.

16. The probe of claim 14, wherein the high intensity light is in the range of approximately 8,000 millicandelas to approximately 31,000 millicandelas.

17. The method of claim 13, the electrical data signal generation further comprising:

generating the electrical data signal in response to light in the range of 10 to 30 lx.

18. The method of claim 13, the electrical data signal generation further comprising:

generating current in the range of 5 to 15 mA for the electrical signal generation in response to a light pulse of 100 lx.